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APRIL 22 1891

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Among the contents of next week's issue (No. 166) will be the following articles:

A National Park at the Sources of the Mississippi.
Editorial.

The Terrace at Monte Carlo. (With illustration.)

How We Renewed an Old Place.—IV.
By Mrs. J. H. Robbins.

Aster Tartaricus. (With figure.)

The paper will contain an illustration of Aster Tartaricus, from a photograph, and a view of the Terrace at Monte Carlo, from a photograph.

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Recent Forest-legislation.

JUST as the last session of Congress closed, an act "to repeal the timber-culture laws and for other purposes" was passed. Hereafter, then, no settler on public lands will be able to obtain a homestead by the planting of trees, although any person who has already made entry on public lands under the timber-culture laws, and who has in good faith complied with their provisions, is entitled to make his final proof and acquire his title. There is no doubt that under this timber-culture act there was much fraud, and there was a melancholy waste of labor and energy owing to the ignorance of planters, and even when a settler did secure land by an honest effort to comply with the law it proved a most expensive way of obtaining a homestead. The repeal of this law was, no doubt, proper, although it may be questioned whether the Government should not have offered to settlers some other stimulus to plant groves and forests. Very few forests have been started on a hopeful life under this act, but every tree-covered acre on those wind-swept plains has great value in itself as an example to others.

This bill contains a great many provisions entirely distinct from the timber-culture repeal, to only one of which we can here invite attention, and of this we have before spoken. Section 24 authorizes the President of the United States from time to time to set apart and reserve any part of the public lands, wholly or in part covered with timber or undergrowth, as public reservations, and the President may by proclamation declare the establishment of such reservation and the limits thereof. The language of this act seems to imply that this proclamation of the President's means more than a mere temporary withholding of the land from entry; that it establishes such forest as a public reservation forever. The President has already under this law accomplished by proclamation the extension of the Yellowstone Park, which the friends of that reservation have been vainly attempting to gain by specific enactment during eight successive sessions of Congress. This proclamation extends the area of the park eight and a half miles to the southward, and on the east adds a strip of country between twenty-four and twenty-five miles wide and fifty miles in length. This last region includes for the most part the Absaroka range, a rough, unsurveyed and little-known country, rarely crossed except by a few hunters. Within this territory peaks rise from 10,000 to 11,000 feet above the sea-level, and its average elevation is over 8,000 feet. In these mountains many of the streams which run into the Yellowstone Lake take their rise. The country to the south is very beautiful, rough, abounding in water, full of game, the favorite breeding-place of the elk; in it is the source of the Snake River. The Secretary of the Interior will place this reservation under the jurisdiction of the superintendent of the park, so that the law and its first-fruits are a matter of universal congratulation.

As there is no restriction to the President's exercise of power in this matter, it is to be hoped that many more considerable forest-areas can now be placed in permanent forest. One place worthy of immediate consideration is the region north of Flathead Lake, within the limits which were laid down in a bill introduced some years ago by Senator Edmunds. This territory, including the crest of the Continental Divide and the wild mountain-ranges to the west of it, is altogether too rugged for prosperous agriculture, and its forests are of incalculable value at the sources of some branches of the Missouri and one fork of the Columbia River. Snow-clad peaks, scores of cascades plunging from lofty cliffs, forests which seem of limitless extent, unite to give unparalleled grandeur to the scenery. If the President of the United States could be induced to set apart this and other regions which could easily be named, and could place them under the charge of the army of the United States, a long step forward in the solution of the forest-problem on the national domain would be taken.

On the same day when this act was passed an amendment to it was made which permits timber to be cut and removed from the forest-lands of the public domain for mining, manufacturing or domestic purposes under regulations prescribed by the Secretary of the Interior. This, so far as we can see, practically opens the whole timber domain of the country to the axes of trespassers, with no restraint beyond what the Secretary of the Interior may choose to exercise. If the Secretary does this in an indirect way, as has formerly been the case, the restraint is likely to be slight. It is imperative that the Secretary should issue some strict regulations in this regard, for without energetic action on his part there will be a general devastation of the public lands. These laws have hitherto been interpreted so liberally, and the frontiersman has become so accustomed to preying upon timber of the Government as if it was his own, that any check upon this unrestricted privilege is looked upon as an inffingement of his personal rights.

Class Vines and Class Trees.

IT is the custom in some of our country high-schools for the graduating class to plant a tree in the neighborhood of the school-house, and for a long period it has been the time-honored custom of universities to set out a vine in commencement week, to commemorate the class that is about to leave college.

During a visit last summer to an eastern college our attention was called to the Ampelopsis, each one labeled with the date of the class cut in one of the stones of the foundation of the chapel, by which the plants were set, and it was melancholy to see how forlorn and small many of them were, and how others had died completely for lack of attention. The same may be said of numbers of the pitiful little Maples and Elms that huddle around the unpicturesque and bare high-school buildings in some

parts of New England, which really should by this time be amply shaded, if a proper attention had been paid to the young trees when set out.

A radical change should be made in the time of planting these commemorative trees and vines. Instead of setting them out at the close of its career every class should, on entering the school or university, erect its growing monument and devote its best energies during the four years of school or college life to having its vine or its tree beat the record in growth and vigor. In this way, if one specimen died another could be planted, that the class might be sure of a memorial, while yearly a committee should be appointed to attend to the plant and a small subscription be levied on each member of the class for proper fertilizers and cultivation.

If the personal attention of the boys could be given to the subject, if they would themselves dig about and enrich and prune what they had planted and would take pride in it, the effect would be good in awakening in their minds an interest in the growth of plants and trees; and some slight knowledge might be acquired of climatic and soil conditions and a hint might be given to them of one of the best and purest pleasures which is within the grasp of man.

In this way could be instilled into the rising generation an interest in forestry that might in time bear fruit in greater care for this property of the nation. Among the books of reference in schools some should be supplied which treat of the proper management of growing things, so that the youths and maidens could study the subject for themselves. If, at the end of each year or four years, some slight reward, such as a simple medal or even an honorable mention, could be awarded to that plant or tree which had made any surprising growth, it might still further stimulate an interest among the young people in this most beautiful and useful work. Masters of schools and professors of colleges should use their influence to bring about this change as speedily as possible, for it could not fail to do good to the youths themselves, and would replace, with vigorous trees and vines, the usually melancholy specimens which many classes now leave behind them as their monument.

Notes on the Distribution of Some Kansas Trees.—II. The Cottonwood (Populus monilifera).

THE Cottonwood is rivaled only by the Elm in the extent of its distribution in the state. While most abundant on the low ground bordering the main streams, where giant trees overhang the water mile after mile, it is also found scattered along most of the smaller tributaries, but always where its roots can reach permanent moisture. Westward it extends as far as trees of any description are found, which is to the west line of the state in several valleys, scattering groves or single trees only occurring in the western tier of counties, and these on the immediate banks of the water-courses. Surprisingly large trees have grown, though now cut down, at points west of what many suppose to be the timber limit of the state. On Walnut Creek, a large tributary of the Arkansas, was the old military post of Fort Zarah, in the western part of Rush County, about two hundred and seventy miles from the eastern line of the state. The post was constructed of heavy Cottonwood logs, many of which were in good preservation ten years ago. This points to a considerable growth of the original timber along this stream, and scattering groves of fair-sized trees may be found to-day through the next county, and single trees to the head of the stream. A huge tree was cut near the Saline River, in Ellis County, a few years ago, which furnished ninety-six loads of wood; the stump measured eight feet across.

The Cottonwood is justly entitled to rank as the historical tree of Kansas. It entered largely into the construction of most of the early buildings, from the frontier stockade, which protected its group of earth-roofed log-cabins, to the wind-swept shanty of the prairie homesteader and the pretentious storehouse and hotel of the growing young town. Men who have helped to make history, both in state and national affairs, will tell of the hardships and adventures of a new country when the cottonwood shanty was the home, office and business block in one.

Park-like groves of these tall trees were abundant along the larger streams, where the first settlements were established, and their shapely trunks afforded the most available supply of logs for the saw-mills which followed the advance-guard of settlement. With Pine lumber only to be had by hauling from points on the Missouri River, we can readily see why the Cottonwood played so important a part in the development of the country.

After the building of the Union Pacific Railroad, which brought Pine lumber within much easier reach of the settlers of the Kansas valley, the greater cheapness of the native lumber caused it to be used largely for the frames of buildings, while Pine was used for covering and finish. This lumber varied greatly in quality, much of it being of a loose, spongy character, warping and twisting into the most fantastic shapes when exposed to the sun and wind. A house built entirely of it, after a few months, afforded but scanty protection against the winter winds. Certain trees furnished lumber of a firm, straight grain which made excellent frames, and even very acceptable floors and inside finish. When once firmly nailed to its place, if clapboarded and shingled with Pine lumber to exclude the weather, Cottonwood made a strong and durable building. I have examined houses that have stood for thirty years where the Cottonwood joists and sheathing boards were as straight and sound as when placed in position.

One of the institutions of the new country, which has disappeared with the steam saw-mill, was the shingle-mill, where the shingles, instead of being sawed or rived, were cut. The shingle blocks, after having soaked in a tank of hot water, were placed upon the machine at a suitable angle, when the descent of a broad, thin knife, operated by horse power, pared off the shingle much as the thin stuff for fruit packages is now cut. These shingles were of poor quality, and needed frequent renewal. A much better article was secured by the primitive process of riving and shaving them on the "horse," so common on the New England farm. These I have seen which had lasted for twenty years in fairly good condition.

A variety known as the Yellow Cottonwood was recognized by choppers and mill-men, and much prized for the superior quality of its lumber, which was unusually firm and heavy, straight-grained and of a peculiar color recognizable when the tree was cut. As seen standing, the tree was supposed to have a straighter trunk and deeper-furrowed, darker bark than the common form. Whether any well-marked, constant type can be made out is questionable, though the extra quality of lumber from certain trees cannot be doubted. Whether these characteristics can be transmitted by propagating from such specimens by cuttings is a question only to be settled by experiment.

In searching for the finest specimens of Cottonwood in this part of the state, one is constantly reminded that the trees with the finest trunks have been cut and sawed years ago. A tree upon the north bank of the Kansas (see page 187), a short distance below Manhattan, measures twenty-four feet in girth at two feet above the ground, and forks into three branches at ten feet. The spread of its top is over eighty feet. This is the type of a large number of trees which line the banks of our Kansas rivers. Their immense spreading tops have a grandeur not equaled by any other tree in the state. On the Blue River three trees, only a short distance apart, were measured which were twenty feet in circumference, with trunks of from twelve to thirty feet to the first limb. One of these has a top of 104 feet spread, and it is as many feet high. Several others of from sixteen to twenty feet in circumference were measured in the same locality.

The Cottonwood has been more extensively planted on timber claims and for shelter-belts than any other tree. This is due in part to its rapid growth while young, and quite as much to the ease with which a large proportion of trees can be procured from cuttings. That a large number of these have failed is not a matter of surprise, when we remember the moisture-loving nature of the tree. After a few years of rapid growth, trees on the upland begin to fail, and a dry season thins out a large portion of them. Where a plantation includes a little draw which obtains additional moisture the greater size and vigor of the trees are very noticeable. On bottom-lands the growth obtained from a plantation of Cottonwoods in twenty years is astonishing. There are, along many streams, acres of low, sandy land, where farm crops cannot be profitably grown, but which will develop the Cottonwood to perfection. Plantations in such places would yield in fuel enough to pay for all outlay, and the growth of body-timber in twenty or thirty years would be of great value for the many purposes to which cheap lumber is applied, such as crates, baskets and all

kinds of temporary packages, as well as the rougher lumber for buildings.

If plantations could be successfully started of the so-called yellow variety by the use of cuttings the value of the lumber would be greatly increased.

As an ornamental tree the Cottonwood is not well adapted to the fifty-foot village lot, where it is so often planted, only to be cut back into an unsightly pollard when the owner begins to need the space for his house. As an avenue tree for low lands, and where it can be offered plenty of room, no tree in the west is its equal. It is a tree planned on a large scale, and should be grown where the general landscape-effect is large and broad. The nuisance of the flying cotton at seeding time can easily be avoided by propagating only from cuttings of staminate trees, which are readily distinguished by their large red flower-buds in the spring before the leaves open.

Kansas Agricultural College. *S. C. Mason.*

The Sap and Sugar of the Maple-tree.—II.

NEXT comes the positive evidence of Joutel (1684–88), the companion of La Salle till his death, and the only one of his followers (as Charlevoix says) on whom La Salle could depend. He gives clearly both time and place and narrates what he found when laid up by stress of weather and lameness at Chicagou. He says:

"Nous arrivames à Chicagou le 29 du dit [Mars, 1688]. 'Le temps, qui se tint rude nous obligea à rester en ce lieu jusqu au 8 Avril, . . . nous n'avions pas beaucoup de viande mais la Providence nous fournissoit une espèce de manne pour adjouster a notre bled d'Inde, la quelle manne estoit d'un suc que les arbres jettent dans cette saison, et notamment les Érables, dont il y en a quantité dans ce canton, et qui sent fort gros. A cet effet nous faisions de grandes entailles à chaque arbre, auquel nous mettions un vaisseau et un couteau au bas de l'entaille pour conduire la liqueur qui proprement est la séve de l'arbre, laquelle etant bouillie, a force de diminuer devient du sucre.' Nous nous servions de cette eau pour fair bouillir notre bled d'Inde ou sagimité, ce qui lui donnait un assez bon goust c'est à dire un peu sucré. Il semble que la Providence fournit à tout cas comme il n'y a point de cannes à sucre dans ces cantons les arbres en fourmissent; du moins j'en ai veu qui estoient excellent; il estoit excellent; il estoit plus rouge que le notre, c'est à dire celui dont en se sert en France, mais presque aussi bon."*

Père Sebastien Rasles, of the Society of Jesus (1689–1724), says: "Ma nourriture n'est que de blé de Turquie qu'on pile, et dont je me fais chaque jour une espéce de bouillie que je cuis dans de l'eau. Le seul adoucissement que j'y apporte, c'est d'y méler un peu de *sucre* pour en corriger la fadeur. On n'en manque point dans ces forêts."

"Au printemps, les erables renferment une liqueur assez semblable à celle que contiennent les cannes des îles. Les femmes s'occupent à la recevoir dans des vases d'écorce, lorsque ces arbres la distillent; elles la font bouillir, et elles tirent un assez bon sucre. Le premier qui se tire est toujours le plus beau."†

La Hontan (1684–92) says: "Les herables . . . n'ont aucun rapport à ceux d'Europe. Ceux dont je parle, ont une sêve admirable et telle qu'il n'y a point de limonade, ni d'eau de cerise qui ait si bouquet, ni de breuvage au monde qui soit plus salutaire."

"Pour en tirer cette liqueur on taille l'arbre deux pouces en avant dans le bois, et cette taille qui a dix ou douze pouces de longeur est faite de biais; au bas de cette coupe on enchasse un coûteau dans l'arbre aussi de biais, tellement que l'eau coulant le long de cette taille comme dans une gouttière, et rencontrant le couteau qui la traverse, elle coule le long de ce couteau sous lequel on a le soin de mettre des vases pour la contenir."

"Tel arbre en peut rendre cinq ou six boutéilles par jour, et tel habitant en Canada en pourrait ramasser vingt barriques du matin au soir, s'il voulait entailler tous les Erables de son habitation. Cette coupe ne porte aucun dommage à l'arbre. On fait de cette sêve du Sucre et du Sirop si precieux qu'on n'a jamais trouvé de reméde plus propre à fortifier la poitrine."

"Peu de gens ont la patience d'en faire, car comme on n'estime jamais les choses communes et ordinaire, il n'y a gueres que les enfans qui se donnent la peine d'entailler ces arbres."

"Au reste, les *Erables* des pais Septentrionaux ont plus de séve que ceux des parties meridiónales, mais cette séve n'a pas tant de douceur." *

Père Lafitau, of the Society of Jesus (1700–05), says: "Nos sauvagesses font le sucre, quelle expriment du suc des arbres, et en particulier des Erables."

"Au mois de Mars, lorsque le soleil a pris un peu de force, et que les arbres commencent à entrer en séve, elles font des incisions transversales avec la hache sur le tronc de ces arbres d'où il coule en abondance une eau qu'elles recoivent dans des grands vaisseaux d'écorce; elles font ensuite bouillir cette eau sur le feu, qui en consume tout le phlegme, et qui epaissit le reste en consistence de syrop, ou même de pain de sucre, selon le degré et la quantité de châleur qu'ils veulent lui donner. Il n'y a point à cela d'autre mystère." †

The "burnt taste" which he describes would naturally result from the primitive Indian method of evaporating the sap by red-hot stones in vessels of bark or wood.

James Smith (1755–60), an English youth, was taken captive by Indians in 1755 at the age of eighteen years, and carried to Fort Duquesne just before Braddock's defeat. He was adopted by the tribe, made an Indian, and kept as such with them for five years. He says:

"Some time in February (1756) we began to make sugar. As some of the Elm-bark will strip at this season, the squaws . . . took the bark off the tree, and of this bark made vessels in a curious manner that would hold about two gallons each; they made above one hundred of that kind of vessels. In the Sugar-tree they cut a notch sloping down, and at the end of the notch stuck in a tomahawk; in the place where they stuck the tomahawk they drove a long chip in order to carry the water out from the tree, and under this they set their vessels to receive it. As Sugar-trees were plenty and large here they seldom or never notched a tree that was not two or three feet over. They also made bark vessels for carrying the water that would hold about four gallons each. They had two brass kettles that held about fifteen gallons each for retaining the water; and though the Sugar-trees did not run every day, they had always a sufficient quantity of water to keep them boiling during the whole sugar season.

"The way that we commonly used our sugar while encamped was by putting it in bears' fat until the fat was almost as sweet as the sugar itself, and in this we dipped our roasted venison." ‡

Again, he says: "Shortly after we came to this place—head-waters of Big Beaver Creek—in February (1757) the squaws began to make sugar. We had no large kettles with us this year, and they made the frost, in some measure, supply the place of fire in making sugar. Their large bark vessels, for holding the stock water, they made broad and shallow, and, as the weather is very cold here, it frequently freezes at night in sugar time, and the ice they break and cast out of the vessels. I asked them if they were not throwing away the sugar? They said no, it was water they were casting away, sugar did not freeze, and there was scarcely any in that ice. . . . After several times freezing, the water that remained in the vessel changed its color, and became brown and very sweet." §

Monsieur Bossu, Chevalier de l'Ordre Royal et Militaire de Saint Louis, and a captain in the French navy (1756-71), writing "aux Illinois, Nov., 1756," says: "Apres les premières civilités, [au Village des Péorias] on m'apporta une calabasse pleine du suc végétal d'un arbre qu'on appelle *érable*. Les sauvages le tirent au mois de Janvier, en'y faisant un trou au pied avec une vrille à laquelle ils adaptent une canule. Il en découle au premier dégel environ une barrique d'eau, ou de jus, qu'ils font bouillir jusqu'à ce qu'il soit réduit en sirop lequel étant rebouilli, se convertit en sucre un peu roux, et semblable à la manne de Calabre, les apoticaires le préferent justement au sucre de cannes. Lez François, établis aux Illinoiz, *ont appris des sauvages* la façon d'en faire."

"A l'entremet, on m'apporta plein une gamelle de bouillie de sagamité assaisonnée avec du sirop *d'erable*, ragout sauvage, assez bon and tres rafratchéssant." ‖

Bossu also says, writing, "Au pays des Akansas": "Ils me donnerent pour boisson une liqueur que ces sauvages nomment *Iachita*. Elle ressemble à du lait d'amande pour la blancheur; mais elle est beaucoup plus épaisse—on la fait avec du maïs. Ils le cueillent lorsqu'il est tendre, and après en avoir exprimé le suc, on y met du *sucre* de canne ou *d'erable*."

* "Voyage depuis les Illinois jusque a Missilimakinak." Margry, iii., pp. 509-10. Paris, 1879.
† Rasles, to his nephew, 15th October, 1722. Narratsouk. Lettres Edifiantes. Vol. iv., p. 83. A. Lyon, 1819.

* La Hontan, vol. ii., pp. 61—2. A la Haye, 1706.
† Lafitau, Moeurs des Sauvages Ameriquains, vol. ii., pp. 153—5. Paris, 1724.
‡ Captivity of James Smith. Cincinnati, 1870, pp. 36-37.
§ Idem, pp. 68-9.
‖ Nouveaux Voyages aux Indes Occidentales. Part I., Lettre ix., p. 164. Amsterdam, 1769.

"Cette boisson est non-seulment fort nourissante mais fortifie l'estomac. . . . La plupart des femmes blanches qui veulent entretenir la fraicheur de leur teint en prennent en decoction, et s'en lave la peau du visage."*

Besides the interest of a new cosmetic, this passage indicates, at this date, a supply of maple sugar corresponding to that of the cane.

Though this record of evidence is limited, it seems clearly to show that the Indians understood and made use of the sap of the different Maples, and, perhaps of the Beech, before the advent of the European; and that, before the discovery of the Mississippi, the making of maple sugar must have been an established industry among their tribes. The narrative of James Smith indicates that the making of sugar was not known by the Pennsylvanians as late as 1656.

Providence, R. I. *William D. Ely.*

Two Studies for House Plantings.

MOST American suburban houses stand naked in naked enclosures. The ugly fact has been pointed out, and the obvious remedy has been suggested in previous numbers of this paper. (See papers on "How to Mask the Foundations of a Country-house," vol. ii., pp. 350, 362, 386 and 409.) It has been shown that even in the smallest house-yards one helpful thing can be easily accomplished—the building may be connected with the ground and the appearance of nakedness removed by massing shrubs along the bases of the walls or piazzas. In almost every situation, be it among sea-side ledges or amid fertile lawns, some planting of this sort is required, the arrangement of the plants and the selection of sorts being carefully adapted to the character of the site and the style of the building.

In the suburbs of northern cities a square, stiff, high-studded and somewhat pretentious house is very common. Such houses are often surrounded by piazzas or verandas. In summer beds of gaudy Geraniums or foliage-plants border the piazzas or flaunt in scattered circles or half-moons. In winter the windows look upon bare beds of loam. This is a style of planting which costs much trouble, but its results are never permanent, and seldom tasteful. It works with herbaceous plants, and these chiefly of tender sorts.

The style of planting which uses permanently effective shrubs and hardy perennial herbs is illustrated by the diagrams and lists on page 185. Two houses of the stiff suburban type of twenty years ago are distinguished in the drawing by being numbered 1 and 2. Both houses are half-surrounded by roofed piazzas, the floors of which are several feet from the level surrounding ground. House Number 1 is inhabited the year round. Number 2 is not occupied in winter. Each house is shown twice in our drawing, for the purpose of presenting alternative planting schemes, prepared by two professional designers of plantations, one of whom submits the diagrams lettered A, and the other sends the schemes marked B.

In very briefly comparing these two schemes it must first be noted that both designers have planned continuous masses of plants, broken only at the piazza-steps. Undoubtedly the level character of the two sites and the formality of the buildings combined to compel them to this essentially stiff arrangement. Irregular buildings on broken ground would be planted in a very different manner. Here, in the schemes marked B, the formality is a little less pronounced than it is in the others, for the outline of the planted space, which is the edge of the grass, is a gently flowing line, whereas in the schemes marked A it is a line drawn strictly parallel to the edge of the surrounding drives and walks, leaving a grass strip two feet wide throughout.

As respects the massing of plants within the spaces thus outlined, the A schemes are again a little more formal than the Bs. The masses of each kind are here arranged so as in a measure to correspond to the openings between the roof-posts of the piazza, while in the B schemes this symmetry seems rather to be shunned. The writer must record his feeling that the designer of the A schemes might well have gone a step further in his chosen direction and have secured a more symmetrical balancing of masses at the sides of the several flights of entrance steps. In cases like these, where formality is almost a necessity, pronounced symmetry is generally more effective than any half-way measures.

As respects the choice of plants with which to make the masses determined upon, there is little to choose between the two schemes. This, which is commonly considered the chief problem in planting, is really subordinate to the more fundamental questions of outline, form and ultimate altitude. Plants must not be chosen simply for their prettiness; they should be selected for their fitness to produce the desired outlines and masses. Both designers have evidently been guided by this principle. Thus, in diagram 1 A, the author has set a dwarf Magnolia opposite a certain corner of the piazza, not so much because he adores Magnolias as because he wants, at that point, something distinct and forcible. Similarly, in diagram 1 B, the creeping Cranberry is freely used in the front edges, not because it is fashionable or gorgeous, for it is neither, but because it will perform a service of importance, namely, the covering of the ground in the edges near the grass.

Further comment could only emphasize the lesson that even house planting should be regarded studiously. Its problems, like those of larger planting, are real problems in design. It must be so regarded if our house-grounds are to cease to exhibit the monstrous forms of decoration which are now so common.

Boston. *Charles Eliot.*

*Noveaux Voyages dans l'Amerique Septentrionale, pp. 237-8. Amsterdam, 1777.

Notes on Some Insects and Insect Remedies.

IN the second volume of Garden and Forest, p. 461, there was given a notice and figure of a troublesome Elm pest (*Gossyparia ulmi*), an insect related to, and having many of the habits of, the scale insects. During the last two years the pest appears to have spread over a much wider territory, and to have attracted attention in various places besides the localities where it was first noted. In the Report of the Vermont State Agricultural Experiment Station for 1889 it is reported as quite common on Elms, and doing much damage to them at Burlington, where it is said to have existed for several years. While the injuries caused by this insect are slow and not immediately disastrous, the effects of large numbers on the trees prove very disagreeable and detrimental to the beauty of their appearance, and the vital sap taken from the tree eventually results in loss of vigor.

Some natural aids may ultimately be of assistance in keeping the pest in check, and meanwhile we have to depend on artificial remedies to clean the trees.

Where they are large it will be almost impossible to clear the Elms of these insects, but the nuisance may be mitigated by one or two sprayings of kerosene emulsion. Young trees recently planted out show more quickly the injurious effects caused by the insects sucking their juices. It is possible to destroy all of these pests on such small trees by giving every limb a thorough wash of whale-oil soap dissolved in the proportion of one pound of soap to a gallon and a half to two gallons of water, and applied in early spring just before the buds open.

When the insects are in an active state the spraying by kerosene emulsion may be most effectually applied against them. In this vicinity the chief active periods occur in the latter part of April and early in May, in the last of June and early July and again in August. As some inquiries have been made regarding the emulsion, the following is given as a good standard. It is the formula recommended as the best by Professor Riley.

Dissolve half a pound of common or whale-oil soap in one gallon of boiling water. While still hot add this solution to the kerosene and vigorously churn the mixture. This may be done in five minutes by means of a force-pump and spray-nozzle. The emulsion, if perfect, forms a cream which thickens on cooling, and should adhere without oiliness to the surface of glass. Before using, dilute, in the proportion of one part of the emulsion to nine parts of water, the three gallons of emulsion, thus making thirty gallons when diluted. It is best applied by means of a force-pump and fine spraying nozzle, of which there are numerous styles in the market. The Riley or Cyclone nozzle is considered one of the best, and it is not patented.

The emulsion, much less diluted, may be used as a wash, instead of whale-oil soap, on the stems and branches before the leaves expand.

Professor Fernow's notice regarding "Insect Lime for the Gypsy Moth," in Garden and Forest for March 25th, offers some valuable suggestions, and places before our notice a remedy or preventive which may prove very useful against certain destructive insects. If better, it promises to take the place of printers' ink or the expensive oil-troughs as a band around trees to keep the female Canker-worm moths from ascending to deposit their eggs in autumn and spring.

The merits of its recommended use against the Bag-worm, Fall-web worm, Tussock Moth and Gypsy Moth do not appear to be so generally understood. The female Bag-worm moth, like that of the Canker-worm, is wingless, but it undergoes all

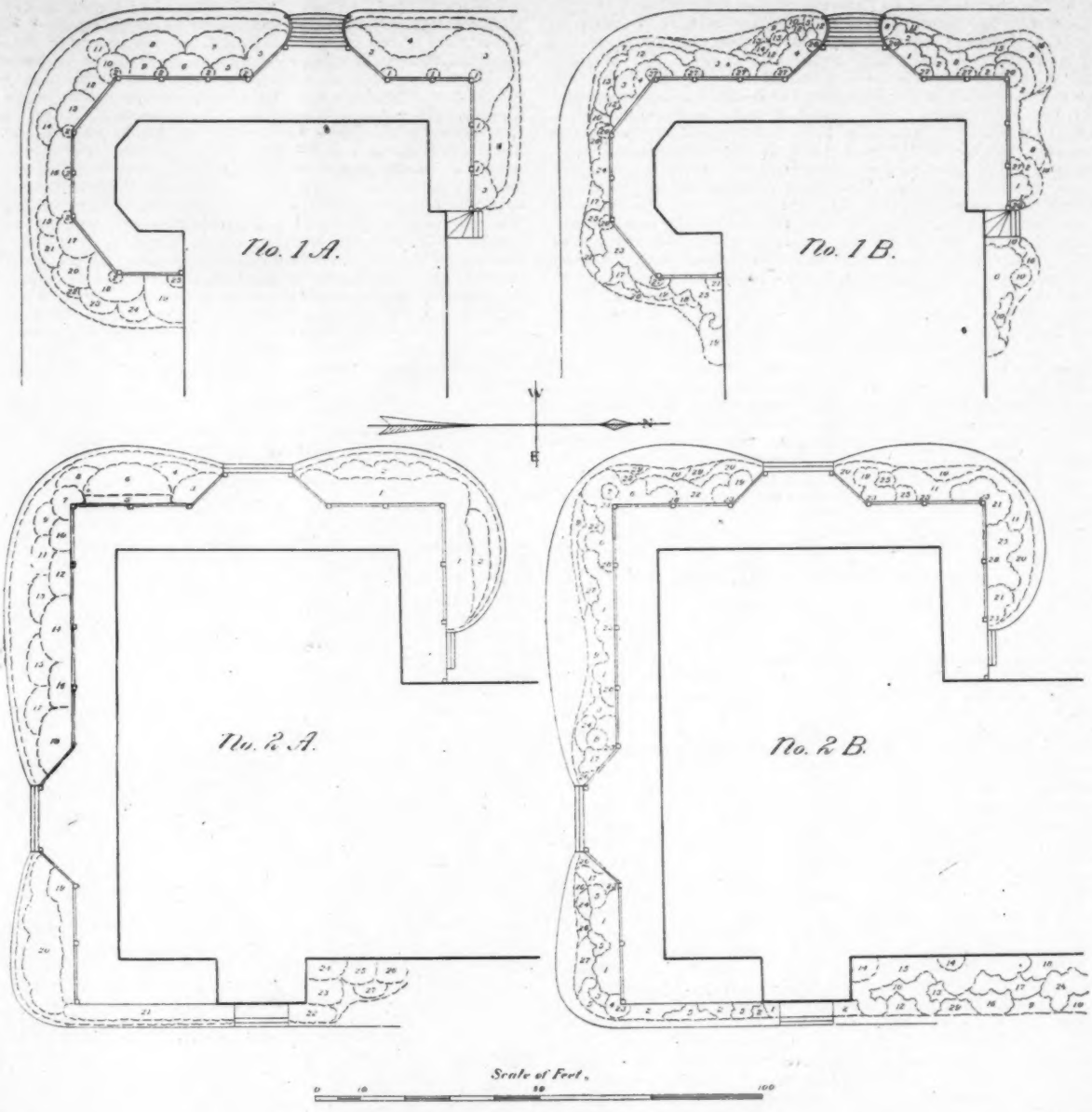

Fig. 33.—Plans for Planting about Piazzas.—See page 184.

No. 1 A.

1, Akebia quinata; 2, Lonicera Chinensis; 3, Rhododendrons; 4, Kalmia latifolia; 5, Rosa rugosa; 6, Rosa rugosa alba; 7, Rosa nitida; 8, Rosa lucida; 9, Rosa multiflora; 10, Forsythia Fortunei; 11, Magnolia stellata; 12, Exochorda grandiflora; 13, Viburnum plicatum; 14, Spiræa callosa; 15, Berberis Thunbergii; 16, Viburnum cassinoides; 17, Viburnum Opulus; 18, Thuya occidentalis; 19, Thuya occidentalis (pyramidal); 20, Cornus alba Sibirica; 21, Juniperus communis; 22, Juniperus communis aurea; 23, Pinus strobus nanus; 24, Thuya occidentalis compacta; 25, Wisteria Sinensis.

Perennials.—Among 3 and 4: Lilium superbum, Lilium Canadense. In front of 3 and 4: Crocus, yellow and purple; Daffodils, single and double. In front of 7 and 8: Daphne Cneorum, Viola, Hepatica, Myosotis. Around 11: Anemone Japonica. In front of 12 and 13: Pæony, Foxglove, Canterbury Bell. In front of 14, 15 and 16: Papaver orientale, Hibiscus Moscheutos, Hemerocallis flava.

No. 2 A.

1, Rhododendron; 2, Kalmia; 3, Spiræa van Houttei; 4, Genista tinctoria; 5, Hollyhocks; 6, Pæonies, Foxgloves, Canterbury Bells; 7, Rosa multiflora; 8, Iris Kæmpferi; 9, Anemone Japonica (white); 10, Exochorda grandiflora; 11, Hypericum aureum; 12, Hibiscus Moscheutos; 13, Delphinium perenne; 14, Viburnum cassinoides; 15, Papaver orientale vars.; 16, Viburnum plicatum; 17, Rosa rugosa alba; 18, Rosa rugosa; 19, Ligustrum Ibota; 20, Azalea in variety; 21, Spiræa Thunbergii; 22, Berberis Thunbergii; 23, Deutzia Sieboldii; 24, Rhus glabra; 25, Philadelphus grandiflorus; 26, Chionanthus Virginica; 27, Hydrangea paniculata grandiflora.

Perennials.—Among 1 and 2: Lilium superbum, L. Canadense and L. speciosum. In front of 1 and 2: Crocus, yellow and purple; Daffodils, single and double. In front of 3 to 18: Astilbe Japonica, Viola pedata, Papaver nudicaule, Lilium candidum, Hardy Pinks, Iris Germanica and aristata, Campanula Carpatica, Doronicum Caucasicum. In front of 20 and 21: Daphne Cneorum. Akebia and Lonicera as in No. 1.

No. 1 B.

1, Rhododendron album elegans; 2, Rhododendron Chas. Dickens; 3, Rhododendron Everestianum; 4, Rhododendron maximum; 5, Kalmia glauca; 6, Kalmia latifolia; 7, Vaccinium macrocarpon; 8, Berberis aquifolia; 9, Daphne Cneorum; 10, Evonymus radicans; 11, Iberis sempervirens; 12, Leucothoe Catesbæi; 13, Andromeda polifolia; 14, Andromeda speciosa; 15, Andromeda Japonica; 16, Vinca minor; 17, Rosa lucida; 18, Desmodium; 19, Clethra alnifolia; 20, Actinidia volubilis; 21, Chionanthus Virginica; 22, Xanthorrhiza apiifolia; 23, Viburnum plicatum; 24, Stuartia pentagyna; 25, Rhodotypos kerrioides; 26, Symphoricarpus vulgaris; 27, Lonicera brachypoda.

Perennials.—Gypsophila repens, Phlox subulata and amœna. Saxifraga crassifolia, Veronica rupestris, Epimedium macranthum, Epimedium alpinum, Galax aphylla, Lilium and Crocus in variety, Chionodoxa Lucilliæ, Fritillaria Meleagris, Narcissus in variety, Scilla Sibirica, Galanthus nivalis.

No. 2 B.

1, Rosa rugosa; 2, Rosa lucida; 3, Rosa multiflora; 4, Pyrus Japonica; 5, Pyrus Maulei; 6, Magnolia stellata; 7, Magnolia Soulangeana; 8, Magnolia conspicua; 9, Spiræa Bumalda; 10, Spiræa Japonica alba; 11, Spiræa Van Houttei; 12, Spiræa Cantonensis; 13, Spiræa Japonica Fortunei; 14, Chionanthus Virginica; 15, Calycanthus floridus; 16, Clethra alnifolia; 17, Viburnum cassinoides; 18, Viburnum dentatum; 19, Viburnum plicatum; 20, Symphoricarpus vulgaris; 21, Forsythia suspensa; 22, Forsythia Fortunei; 23, Actinidia volubilis; 24, Diervilla rosea; 25, Rhodotypos kerrioides; 26, Xanthorrhiza apiifolia; 27, Berberis Thunbergii; 28, Akebia quinata; 29, Hypericum Kalmianum.

Perennials.—Aster Novæ Angliæ, Cassia Marilandica, Eupatoreum ageratoides, Helianthus decapetalus, Helianthus orgyalis, Lychnis Chalcedonica, Monarda didyma, Anthemis tinctoria, Asclepias verticillata, Convallaria majalis, Dicentra eximia, Epimedium in var., Euphorbia corallata, Gaillardia in var., Geranium sanguineum, Hesperis matronalis, Pæonia in var., Hydrophyllum in var., Mitella diphylla, Vinca minor.

of its transformations on the tree, and so long as there is sufficient foliage to provide food its progeny have no occasion to leave it, although many of them instinctively do go in search of new trees upon which to deposit eggs. But if trees are cleared of Bag-worms, a band of the "insect lime" will prevent migrants from ascending them from other trees and shrubs. Fortunately, this insect is rare in Massachusetts. The Tussock Moth can also, and usually does, complete the round of its existence upon the tree on which the eggs are deposited. The females being wingless, well-kept bands of the "insect lime" would prevent either the females or the caterpillars from ascending trees which were already entirely free.

In regard to the Fall-web worm, one can hardly see how the "insect lime" will prove effective. The female moth flies freely, and when the caterpillar is ready to become a chrysalis it is as likely to drop directly to the ground as to attempt to crawl down the trunks of the trees where the band of lime would prevent its passing over. A few might be destroyed in this way, but the proportion would probably be small.

The use of the "insect lime" for covering the eggs of the Gypsy Moth would, no doubt, be effectual if thoroughly applied, but it would seem to be quite as simple and expeditious, or economical, to scrape off, collect and finally burn the egg-clusters. The kerosene torches used in burning the eggs at Medford last year, must, doubtless, cause injury to tender-barked trees.

The value of the "lime" in preventing caterpillars from crawling up or down the trees can be easily understood and appreciated.

Arnold Arboretum. *J. G. Jack.*

Foreign Correspondence.

Orchids at Clapton.

Saccolabium bellinum.—This is one of the prettiest of the many described species of Saccolabium. It is remarkable in being one of the smallest in habit and at the same time the largest in flower. It was introduced from Burma in 1884 by Messrs. Hugh Low & Co., Clapton, when it was named and described by Reichenbach as "one of those elegant little beauties one may delight to look at after being tired of monotonous grandeur." The plants do not exceed six inches in height; the leaves are narrow, about six inches long, dark green and herbaceous in texture. The racemes are produced at the base of the plant, and bear from three to eight flowers in a compact cluster; each flower is an inch across, fleshy, the sepals and petals yellow, with brown blotches, the lip with a large cup-shaped sac, fringed round the margin, and colored white, with red or purple blotches. I lately saw about five hundred plants of this species in the Clapton nurseries, many of them in flower, some darker than others, but every one charming in form and color. I know from experience that this Saccolabium is easy to cultivate, a plant which has been in the Kew collection since 1885, having flowered every year since. Many Saccolabiums are not nearly so well behaved in the garden as this.

Dendrobiums.—A magnificent collection of these beautiful Orchids may now be seen at the same nurseries, where the cultivation of this genus is exceptionally well done. Such species as *D. Bensonæ*, *D. Brymerianum*, *D. luteolum*, *D. crassinode*, *D. Wardianum*, *D. lituiflorum*, *D. Devonianum*, *D. thyrsiflorum* and *D. suavissimum* are grown in enormous numbers, and Mr. Low informed me that his success with these plants was the result of a radical change of treatment for them in the growing season. This consisted of exposure to almost all sunshine, a constantly saturated atmosphere, and no ventilation. The most important item is this last. Mr. Low found that closeness, with a maximum of light, was exactly what the Dendrobiums reveled in. They kept free of insect pests, and they were not attacked by "spot." The growth was rapid, and became thoroughly ripened before winter set in; consequently there was a good set of flower-buds.

Phalænopsis.—These plants have always been exceptionally well grown at Clapton, where, in a favorable winter, it is not an unusual occurrence for from five to eight hundred spikes of bloom to be expanded at one time. This winter has, however, been very destructive to the early-flowering species, such as *P. amabilis* and *P. Stuartiana*, of which scarcely a spike escaped at Clapton, although many hundreds were produced. In the case of *P. amabilis*, Mr. Low retrieves the loss of the first spikes by cutting them off to within six inches or so of the base, which induces them to develop a secondary spike, and as this matures later in the year the flowers are saved. Still it is a great strain on the plants to force them to produce two spikes instead of the normal one.

P. Schilleriana, however, is magnificently in flower at Clapton now, over 500 fine spikes of flowers being fully open at the time of my visit. The health of the plants is perfect, all, from the smallest with leaves no larger than a finger-nail, to the grand specimens with leaves a foot or more in length, being perfectly happy. The treatment for these plants at Clapton differs somewhat from that usually followed. Mr. Low thinks that a large percentage of the Phalænopsis that die in gardens are killed by too dry treatment. A light house where the winter's sunlight may be made the most of, sufficient heating power to maintain a temperature not lower than seventy degrees even in severe weather, an earthen or cinder floor and a constantly saturated atmosphere all the year round—these are the main features of the Clapton treatment for Phalænopsis. Mr. Low says the sphagnum about these plants should never be allowed to even approach dryness. Baskets are used for all the kinds, and they stand upon open wooden stages about two feet from the glass. The house is kept moist by frequent damping down. There are two large span-roofed houses devoted to these plants at Clapton, the principal species cultivated being *P. amabilis*, *P. grandiflora*, *P. Schilleriana*, *P. Stuartiana*, *P. rosea* and *P. gloriosa*.

London. *Visitor.*

New or Little Known Plants.

New Orchids.

Odontoglossum luteopurpureum, var. Amesiana, Hort., is a very handsome variety, for which Messrs. F. Sander & Co., of St. Albans, received a first-class certificate from the Royal Horticultural Society on March 10th last. It is described as having flowers of a pale yellow-green color, unlike that of any other Odontoglot.—*Gardeners' Chronicle*, March 14th, p. 334.

Cypripedium × Ceres, N. E. Br., is a handsome hybrid, derived from *C. Spicerianum* fertilized with the pollen of *C. hirsutissimum*, in the collection of D. O. Drewett, Esq., of Riding, Mill-on-Tyne. It resembles the pollen parent generally, though the dorsal sepal and staminode show characters unmistakably derived from the seed parent.—*Gardeners' Chronicle*, March 21st, p. 360.

Cypripedium × Juno, N. E. Br., is a charming little hybrid, raised in the collection of D. O. Drewett, Esq., of Riding, Mill-on-Tyne, between *C. callosum* and *C. Fairieanum*, the latter being the pollen parent. It bears a strong resemblance to *C. Fairieanum* in almost all its characters, but especially in the shape and color of the flower. It appears to have arrived at the flowering stage in less than three years from the time the seed was sown.—*Gardeners' Chronicle*, March 21st, p. 360.

Cypripedium × Pallas, N. E. Br., is a hybrid, raised in the same collection as the two preceding ones, between *C.* × *calophyllum* (itself a hybrid from *C. barbatum* and *C. venustum*) and *C. callosum*, the latter being the pollen parent. The upper sepal is white, with numerous green nerves, as in the seed parent, to which in other respects it bears a considerable resemblance.—*Gardeners' Chronicle*, March 21st, p. 360.

Waluewa pulchella, Regel.—Described as a new genus of Orchids, received from the province of Minas Geraes, Brazil, by Herr Lietze, and which flowered in the Royal Botanic Garden at St. Petersburg. It is dedicated to Count P. A. Wahijew. It appears to be closely allied to *Leochilus*, but bears a strong resemblance to certain species of *Oncidium* of the *O. pulus* group. The flowers are small, the sepals greenish yellow and unicolorous, the petals yellowish, barred with purple; the lip also has some purple markings on a yellowish ground. The linear disc is minutely papillose.—*Gartenflora*, xl. (1890), p. 89, t. 1341, fig. 1.

Kew. *R. A. Rolfe.*

Cultural Department.

Hardy Shrubs for Forcing.

MANY of our hardy shrubs can be forced, under a moderate temperature, into early bloom in the greenhouse. In order to get the best results with the least trouble, shrubs for forcing should be selected from the early-flowering kinds. The forcing should be done moderately and gradually—that is, the plants should first be placed in a cool greenhouse or cool part of a greenhouse until growth has fairly begun; later, if desirable, they may be introduced into a warmer temperature, where growth and development of the flowers may be hastened.

When brought into a warm temperature too suddenly the buds are liable to become injured or blighted, and a dry at-

mosphere is also injurious. Plants intended to be forced may either be lifted during the previous spring and placed in tubs or pots, where they continue growth during the summer, or fibrous-rooted kinds may be lifted with an adhering ball of earth in the late autumn, and, together with the potted plants, be placed in a pit or cellar until wanted. Plants for exhibition or ornament are generally taken up and potted long before being forced, but autumn lifting usually answers where only blossoms are desired. Where the winters are not severe some of them may be taken directly from the ground in mild weather, but where the earth is liable to remain frozen it is best to have all out of reach of frost. Cuttings of some kinds may make good, compact little flowering plants in the course of a few months' growth.

Deutzia gracilis and *Rhododendron* (*Azalea*) *mollis* and others are now almost universally grown for winter forcing, and

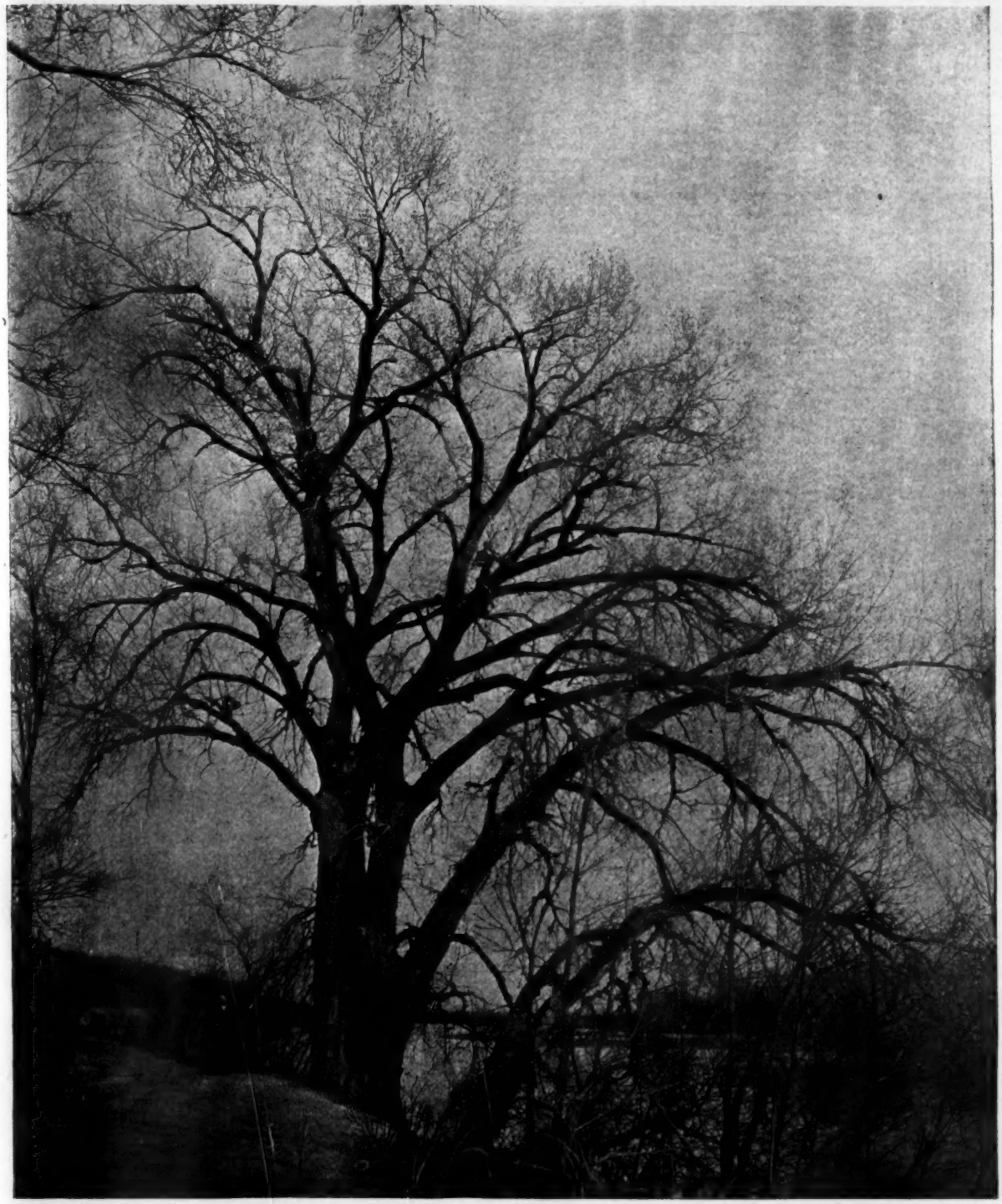

Fig. 34—A Cottonwood Tree (*Populus monolifera*) on the banks of the Kansas.—See page 182.

the Lilac has come into quite general use among florists. The Flowering Almond, the Peaches and Cherries, and, among others, *Prunus Pseudo-cerasus*, force well, and the last is very pretty and lasts in bloom a long time, although it cannot be counted a florist's flower.

Well-grown grafted plants of varieties of the beautiful flowering Japanese and Chinese Crab Apples are easily brought into early bloom if planted the preceding year in tubs or pots, and not forced into too rank growth. The flowers of our Chokeberry (*Pyrus arbutifolia*) come out well under artificial heat, and the deep green shining leaves are attractive, although the plants have a rather straggling habit.

An interesting plant for early forcing is the very dwarf form of the Japanese Quince, which is known as *Pyrus Maulei*, and which bears a profusion of orange-scarlet flowers. It is better than many of the forms of *P. Japonica*, because of its more compact habit and its more numerous and slender branchlets.

Staphylea Colchica is now quite extensively cultivated and forced for commercial purposes, and, when well grown, its fragrant tuberose-scented flowers are among the most beautiful to be obtained from forced shrubs. This species surpasses any of the other hardy Staphyleas for forcing purposes.

Among many others of its genus *Rhododendron Vaseyi* blossoms as charmingly when hastened in the greenhouse as it does when left to bloom in the open air with the coming of warm weather.

Well-grown and full flower-budded plants of our American Laurel (*Kalmia latifolia*) may be forced into one of the most beautiful objects of winter decoration. The dark evergreen leaves are always attractive, but when the clusters of white or pinkish flowers appear, few greenhouse plants can compare with the Kalmia. Under the influence of a moderate artificial heat, the Rhodora does not take long to open its buds and display its beautiful, rosy purple flowers on its naked branches. It probably would not pay to force this for commercial purposes, but a few plants may give much pleasure to the amateur. This is also true of the Mayflower, or Epigæa, clumps of which may be moved from its native woods in the autumn, and, being transplanted into boxes or pots, the flowers may be produced, whenever desired, throughout the winter. *Andromeda floribunda* and *A. Japonica* are naturally so early-flowering that it is an easy matter to force them, and they make admirable decorative plants in winter. It takes longer to get flowers from *A. speciosa*, but they are among the loveliest of the genus, and well worth waiting for.

Among the showy-flowered hardy Daphnes the blossoms of *D. Mezereum* are very easily brought out, and *D. Genkwa*, from Japan, gives promise of being one of the most interesting plants of its kind for forcing.

Many of the Spiræas are useful for their winter bloom.

The flowers of *S. Thunbergii* are easily brought out, but a forced specimen of this shrub usually looks disheveled and unsatisfactory, but *S. Cantoniensis* (*Reevesiana*) and the plant known in nurseries as *S. Van Houttei* do better.

Grafted plants of the Japanese Red-bud (*Cercis Chinensis*) will be found much better than our native species, inasmuch as the flowers of the former are earlier, larger, and even brighter in color. Dwarfed and well-grown plants of the common Chinese Wistaria are very handsome when forced early, and it is a species which seems to do very well under these conditions. Some of the hardy species of Cytisus are well worth the trouble of bringing into early bloom.

The Forsythias are among the plants which very readily and quickly come into flower under the stimulus of gradual heat. Only those with numerous flower-buds should be selected, and *F. suspensa* and the form sold as *F. Fortunei* will be found more satisfactory for forcing purposes than *F. viridissima*, which they also excel for garden culture. The shrubby *Magnolia stellata* will easily produce its fragrant white blossoms if the buds are well developed. Among later-flowering hardy shrubs which have come into extensive use for forcing purposes is that long known as *Viburnum plicatum*, and which is in every way a much better plant than the old-fashioned Snowball-sterile or form of *V. Opulus*.

That the latest as well as the earliest of our flowering shrubs may be profitably forced is shown by the fact that *Hydrangea paniculata grandiflora* is now grown for commercial purposes in greenhouses. While almost any shrub may be forced into growth before its due season, only a limited number of kinds will be found profitable to the florist, while the amateur and enthusiast has a long and varied list from which he may select subjects for experiment. He will find that many of them never look as well at any other time as they do when blooming out-of-doors in their proper season.

Jamaica Plains, Mass. *J.*

Hardy Narcissus.

THE article on Hardy Narcissus, in Garden and Forest for March 25th, was interesting and timely, as the first of these beautiful flowers are bursting their sheaths (*N. Scoticus* being in the lead, and showing flowers on Good Friday). Mr. Orpet's advice about due care in planting late arrivals of bulbs is sound, and the same remarks would apply to all hardy bulbs, for unless some root-action takes place before freezing weather losses are almost inevitable among the hardiest of them. But there may be an exception taken to the advice to plant deeply in our climate, if this means the climate of our eastern states. That detail seems to me to depend, as with other plants, very much on the garden in which they are to be planted. In my own it is not possible to grow Narcissi deeply planted, neither have I found it necessary so to plant them to grow them successfully and produce flowering bulbs for the following season. As a matter of convenience, where there is a proper depth of suitable soil, deep planting may in some cases be desirable, but it is doubtful if it is necessary in any case. My soil is a heavy retentive one, nine to twelve inches deep, with a clay hardpan, and deep-planted bulbs simply deteriorate to the diameter of a lead-pencil. Planted from one to three inches deep, they thrive as well as one could wish. If an open fall allows the foliage to appear above ground, as it often does, little or no damage seems to be done by following frosts. In December of 1889 I bought a lot of *N. Horsfieldii* too late to plant out, and planted them in three-inch flats in light potting soil. They were lightly watered and placed in a rather open cold frame through the severe weather, and bloomed in the open. They were carefully ripened off, and, the offsets being removed, were planted at a suitable time in the border. They have been blooming freely since April 15th. This experience would seem not only to confirm Mr. Orpet's theory that late-planted bulbs, if properly grown on, would prove satisfactory, but also that very shallow planting is sufficient; in this case only enough soil being used to actually cover the bulbs.

While from necessity a second crop is always grown over my bulbs, I think it is somewhat at the expense of the bulbs; and where space is not important and bulbs are valuable, better results will be had if the beds are left exposed and without a second crop. If this is a matter of necessity, plants which require little moisture or are deep-rooting, like annual Poppies, seem most desirable for such a position. Of course, in garden matters, one only judges from his own glebe and experience. Fortunately, many plants are not as particular as the gardener, and will grow under vastly differing circumstances, so that general rules do not often seem applicable.

Elizabeth, N. J. *J. N. Gerard.*

How to Make a Wild Garden.

IF we have only a few feet of ground in some shady nook, on the north side of a building or beneath the shade of trees, we can have a constant succession of flowers from early spring until late autumn. And to all lovers of flowers this wild nook will be more enjoyable than a prim, conventional garden of florist's flowers.

The wild garden will be vastly more satisfactory if it comes by slow growth. It should never be made in haste, but as we have time now and then in any season of the year to wander amid Nature's groves and gardens and note how the wild things which we desire grow, and also notice their surroundings and the trees which overshadow them, we shall be better prepared to know with what we can best succeed.

There is but little difficulty in growing many of our earliest spring flowers. The Hepatica, the Blood-root, the Wind-flower, the Spring Beauty, the Trilliums and all of our lovely Violets will grow almost anywhere in good garden soil. But there are others which require skill and patience to make live and thrive after being removed from their native haunts.

Perhaps if I give some account of my own failures and successes with wild plants it may help those who wish to secure some of these shy woodland gems. In my wild garden I have some shady places where I concentrated my skill on some of the most difficult of our wild flowers. One of these places is an irregular spot only about fourteen feet the longest way and about ten feet in the widest part. It is situated between three trees which form a kind of triangle,—a large Oak, the body of which is covered with English Ivy, mingled with variegated Evonymus, and an old Pine (*Pinus rigida*) mingles its leaves with those of the Oak, and a Trumpet-creeper has climbed up its rugged sides to its very top, showing clusters of bright scarlet flowers among the deep green pine-needles; the other tree is a Cedar with branches nearly to the ground. This little

spot is the most attractive place in my garden, almost more to me than all the rest of the half-acre devoted to wild plants. It is wonderful how many things grow in this wild spot. From early spring until late autumn it is never without flowers.

Among the first things to greet me in spring are the lovely blossoms of the Trailing Arbutus or May-flower, not stingy little clusters of bloom, but large compact bunches of flowers. I have had many failures with this charming plant, but at last have succeeded in establishing it. I found a fine patch of the plants in the woods, under a Pine-tree, and removed quite a large section of earth with all of the other things that were growing on it, and planted all beneath the old Pine in my garden. It has now bloomed three seasons, and is spreading and growing all the time. Other evergreen trailers are also here. The little Twin-flower (*Linnæa borealis*) is among my treasures, and our little Partridge-berry (*Mitchella repens*) grows luxuriantly. Its small shining leaves, strung along in pairs, are pretty the entire year, and in June it is covered with small pink and white flowers, succeeded by the double berries, which turn scarlet as they ripen, remaining on the plant until the following season, making it as attractive in winter as in summer. Another little plant is the Dalibarda, a low, creeping perennial belonging in the Rose family. With us—in southern New Jersey—the leaves are nearly or quite evergreen, and its pretty white flowers last from June until August. The spicy, aromatic Wintergreen flourishes among the rest, and very pretty it looks in winter, with its shining leaves and bright red berries.

Scattered among these trailers are both species of Hepatica, and the Blood-root, and Spring Beauty, and Wind-flower, and the Wood-sorrel (*Oxalis violacea*), and several species of Violets. And here, too, are some of our lovely Orchids—the Lady's-slipper, the low purplish pink one (*Cypripedium acaule*), and the fragrant yellow one (*C. parviflorum*) blossom every spring.

The dwarf perennial Larkspur (*Delphinium tricorne*), with spikes of brilliant blue flowers, and the wild Hyacinth (*Scilla Fraseri*), with a long raceme of pale blue flowers, bloom here as well as in their native home on the western prairies.

These early flowers are succeeded by several species of our low-growing Ferns, which are beautiful throughout the rest of the season. On the outer edge of this spot are larger, later-blooming plants, and also some of our large Ferns—two species of Osmunda—the Cinnamon and Royal Fern, and our Chain Ferns, the Woodwardia—both species.

The Wild Lily (*Lilium Canadense*) unfolds its nodding flowers by the side of the Ferns, with Rudbeckias and low-growing Sunflowers as companions. Some of these Rudbeckias and Sunflowers are annuals from Texas, and grow readily from seed. When planted early they commence to bloom by the first week in July and continue until frost. In August the Asters and Eupatoriums and Golden-rods begin to mingle with the Sunflowers, making a brilliant display.

As the Golden-rod has become our national flower, it will naturally be more noticed and sought after than heretofore; and as we have some forty or more species growing in the northern states there will be little difficulty in securing some pretty ones in every locality. One of the most desirable and earliest-blooming of all is the sweet-scented Golden-rod (*Solidago odora*). It is widely distributed from Maine to Florida, and commences to bloom here about the middle of July. The flowers are bright yellow in a one-sided, spreading panicle, and it has smooth, shining leaves, which, when crushed, give a pleasant anise odor. This species, together with some of the later-blooming ones, will give us flowers from July until October.

Those who live near the coast should not neglect the beautiful salt-marsh Golden-rod (*S. sempervirens*). It has thick, very smooth, large shining leaves, and fine large heads of bright golden flowers. Although it is a salt-marsh plant, it has become established here, some forty miles inland, as one of our wayside flowers. The seed, no doubt, has been brought and disseminated with salt-marsh hay.

Mary Treat, in the Chautauquan.

A Raspberry Trellis.—It is rare that we find a field of Red Raspberries in which due provision has been made for sustaining the canes during the bearing season. They are cut down, as a rule, in autumn to a height of three to four feet and left to winter through as they can. The damage from snow is always serious. My own loss in winter and from broken canes in summer was so great that I have adopted the following plan: I set strong cedar-stakes at the ends of rows and at intervals of twenty-five feet. To these I staple a wire, as for a Grape trellis, about four feet from the ground. Then, bringing the canes together in bunches of three or four, they are tied with soft strong twine above the wire—not on the wire, for then the cord would soon be cut by the wire. The rows being all tied, intervening and short canes are dug out. Then, with hedge-shears, the tops are cut off at a height of six feet. This height on this plan is not too great. The Raspberry likes a moist, shaded soil; and in this way it shades its own roots. In the bearing season the sides of these trellises become a wall of berries—a wonderful sight to behold. Pickers move up and down the rows quite hidden. I have described my plan with the Cuthbert and Golden Queen in view. These, in fact, are with me the only standard first-class raspberries for market as yet. The Turner must be grown very thinly here, and in hills, to secure a reasonable crop. The Marlboro has succeeded fairly well as above, but with me is not a standard in any sense. Rancocas I must reject, as also Hansell, Lost Rubies and Crimson Cluster. Schaffer's Colossal does admirably on the wire, and is an enormous bearer on that plan. Black Raspberries, in general, had probably best be cut low and grown in stout heads.

Clinton, N. Y. *E. P. Powell.*

Mildew on Sweet Alyssum and Radish.—Among our worst mildews are the members of the genus Peronospora, and among the Peronosporas there is no species equaling the *Peronospora parasitica* in breadth of range. Usually a species of these downy mildews is confined to one or a few of the members of the same host genus, but the one named above is known to grow on forty-seven species belonging to twenty-seven genera. These genera, however, all belong to the large family of *Cruciferæ*, whose members are easily recognized by their similar flowers, pods, and even their peculiar taste. When a mildew will thrive upon a large number of hosts the presence of one host-plant will furnish the breeding-ground and produce a stock within a greenhouse for any other susceptible plant. In a greenhouse recently visited the beds of young Sweet Alyssum showed many pale and sickly plants, which were found badly infested with the downy mildew above mentioned. Radishes had been grown under glass in large quantities, and were perhaps more or less attacked by the same fungus, and while it inflicted little damage upon the short-lived Radish-plant it no doubt multiplied there and spread to the Alyssum near by, from which its destruction may become considerable. Gardeners need to know the kinships of plants, and if one crop is mildewed it is not advisable that another closely related to it should be grown by its side.

Rutgers College. *Byron D. Halsted.*

Distributing Weeds.—Novices need a warning against *Ipomœa pandurata*, "Man of the Earth," which has been re-christened by the seedsmen the "Hardy Moon Flower." Did any one ever get to the bottom of the root of an old plant? I have tried it, but always found it growing stouter as I dug, until I gave it up, and had forty plants come up in place of the one. A worse weed is now advertised as "California Rose," and with the greatest apparent sincerity the sellers give as the botanical name of this "Rose," *Calystegia pubescens*. It may perhaps be one of the California Calystegias, but the probability is that it is *Calystegia Sepium*, var. *pubescens*, the vilest weed which ever infested a garden. I have a note to-day from a lover of flowers who boasted of her new treasure, the California Rose, which she is growing from seed. I at once warned her not to plant it in her garden.

Our common "May Pop," *Passiflora incarnata* is a much prettier plant and flower than any of the *Convolvulaceæ*, but, in this latitude it has the same fault of the Bindweeds, and becomes a troublesome weed in cultivated fields. Perhaps it may not be so bad at the north, but it is well to watch all these things.

North Carolina College of Agriculture, Raleigh. *W. F. Massey.*

Primroses.—There are no more charming plants in spring-time than these, and it is little wonder that they have been garden favorites from time immemorial. For some reason there seems a quite general impression that Primroses are flowers of the shade and dampness, and that under our brazen skies there is so small a chance for success that there is no use in attempting their culture. This may be true of *Primula veris*, the native English Primrose, for there are probably very few such haunts in the United States as that in which this plant was reported by one of your correspondents to have become naturalized, and in the garden it is not long-lived. But within the last decade or two some excellent strains of hybrid Primulas have been secured by the painstaking care of a few florists, and

these prove very satisfactory garden plants in our climate. Among a number of strains Dean's seem quite the best, and leave little to be desired. The plants are vigorous and free-flowering, the flowers are large and well colored, without objectionable tints. Seeds (which may be had of leading dealers) sown now will produce blooming plants next spring. My plants of these are best in a raised border some six feet from the south wall of the dwelling. They receive the full rays of the sun all day, without the slightest shade at any time, and apparently never suffer from the heat. In the winter they remain without any covering, as this is apt to rot the crowns. During the winter many of the leaves are usually scorched by the frost, but new ones are quickly put out, and now, as they are coming into bloom, the plants look very fresh, vigorous and much more stocky and in character than any plants coddled in a frame. In three other borders facing south and west, but more exposed, and not so well drained, the lines of Primroses do not grow nearly so vigorously or bloom as early. If any of your readers have had only moderate success with these plants the location may have been at fault. With these hybrids and a good strain of *P. elatior* (Polyanthus) a long succession of beautiful flowers may be had with little care, and soon a superabundance of plants, as they increase rapidly when divided.

A Taurian Muscari, received from Asia Minor, proves on a second year's trial a valuable addition to the early spring border. This Grape Hyacinth starts into growth in early winter, putting forth leaves which are long, narrow and prostrate. The bloom slowly appears as soon as the ground loosens, and this year from early February till now a colony of a hundred or more plants has been a cheerful spot in the border. The flowers are light purple (florist's blue) on the apex of the cluster, and shade to deepest purple at the base on stems about six inches high. Each small bell-like flower is constricted at the mouth, where it is furnished with a fringe of white. The blooms are not injured by hard weather. The list of available very early blooming plants is lengthening rather rapidly, and this may be considered a desirable addition to the earliest class.

Arabis alpina.—This Rock Cress is one of the best of the hardy low-growing early-blooming plants where white flowers are desired. Its simple pure white blooms are about three-fourths of an inch in diameter, and very freely produced. In broad masses it is especially attractive. It precedes *Phlox subulata* in blooming, and like this is fond of a location not too wet. Plants of this may be had of most hardy plantsmen or it may be secured readily from seed.

Elizabeth, N. J. *J. N. G.*

Correspondence.

Colorado Conifers for Eastern Planting.

To the Editor of Garden and Forest:

Sir,—Allow me to endorse your remarks, in connection with Mr. Moon's letter, on page 153 of Garden and Forest for April 1st, 1891. An attempt to grow California trees north of the latitude of Philadelphia will be almost sure to result in disappointment. But in making this statement we must use the words "California trees" only in a geographical sense, and not forget the great difference in hardiness that exists between the same species on the Pacific slope of the Rocky Mountain range and those on the eastern slope. This difference is so great as to form separate varieties of the same species, as far as the manner of growth is concerned.

In Colorado we have *Pinus ponderosa, Pseudotsuga taxifolia, Abies concolor* and *Picea pungens*, all growing in thick forests on the mountain-sides, and enduring a climate far more severe in every way than around New York City. In winter there are sudden storms of snow and sleet, with the thermometer falling as low as thirty degrees below zero, followed by days of almost summer heat, with scorching sun and drying winds. In summer there are long seasons when no rain falls to provide their needed moisture. And these trees are no stunted, twisted trunks with a few branches, struggling for a bare existence, but grand and noble specimens of tree-life, towering in lofty grandeur to a height of nearly 200 feet. I have seen single isolated specimens of *Abies concolor*, rising like towers, full of light and shade and beautiful color, which could not be excelled anywhere as types of vegetable life. There, too, the rich deep green of the Douglas Spruce, with its soft foliage, and the bright, warm tints of the Engelmann's Spruce, give a wonderful attraction to the Colorado forests. No one need doubt the perfect hardiness of any tree that grows in Colorado, Wyoming or Montana. This has been generally recognized by nurserymen who grow forest-trees in quantity, and they will advertise the trees above named as grown from Colorado seed. Let any planter be sure his trees are derived from seed gathered in the states named, and he need have no fear of the result, but rest sure that, accidents barred, they will live to reach a magnificent maturity.

Colorado Springs, Col. *Geo. H. Parsons.*

[The conifers of Colorado, so far as it is possible to judge of them from an experience which does not extend beyond twenty-five or thirty years, are well suited to withstand the climate of the northern Atlantic states, although, as we have insisted again and again, it is not safe to pronounce upon the capacity of any tree to flourish in any locality until it has been grown in that locality in considerable numbers during a period equal to the life of an individual of the species. Of the trees mentioned by our correspondent, plants of *Pseudotsuga taxifolia, Abies concolor* and *Pinus ponderosa*, raised from Colorado seed, are absolutely hardy in the most exposed situations in New England, while plants of the same species raised from seed gathered on the Pacific side of the continent either fail entirely in this part of the country or are very unreliable. Judging by what we now know of these trees, the Pseudotsuga from Colorado is the most valuable exotic conifer which can be planted in the northern states; while *Abies concolor* is the hardiest and most beautiful of all the Silver Firs here. *Picea pungens* and *P. Engelmanni* are both peculiar to the dry interior part of the continent, and do not reach the humid coast-region. They are both hardy in the east. *Picea pungens*, the so-called Blue Spruce of nurseries, is already planted in large numbers, and in its young state is very beautiful. The largest plants in the east begin, however, to show indications of failure in their lower branches, and those persons who have watched these trees most closely in cultivation feel that they may not maintain their early promise—a view which is strengthened by the fact that in Colorado this tree loses its lower branches early, and is much more beautiful in its young state than it is later in life.

Picea Engelmanni, as it appears in the elevated forests of Colorado, is probably the most beautiful of all the Spruces. Transported, however, to the sea-level, it grows very slowly, like all alpine trees, and it is not probable that it will be very much esteemed as an ornamental tree in the eastern states, but as it is very promising in the extreme northern part of Europe, it will doubtless prove a valuable tree for the cold regions of Canada. It is one of the first conifers to start into growth in the spring, and for this reason is worthless in countries like England, where spring frosts prevail.—Ed.]

The Home of Certain Syringas.

To the Editor of Garden and Forest:

Sir,—Not long ago an article in Garden and Forest discussed the different species of Syringa cultivated in gardens, and in this article it was stated that the native country of *Syringa Josikæa*, Jacq., was unknown, and that all the plants in cultivation have been derived from a single specimen found in a garden in Hungary.

The statement is inexact, and the country where this species grows naturally is well known. It was discovered in 1830 by the Baroness Josika (née Craki) in Transylvania, not in a garden, but on the rocky banks of the river Sebes, in Clausenberg, and the younger Jacquin, who named the plant in honor of the discoverer, showed specimens of it at the Congress of Naturalists, held that year at Hamburg, inserting the first diagnosis of his species in the account of this meeting published in the *Bot. Zeit.* (1831, p. 67). Reichenbach, in his "Flora Germanica Excursoria," published in 1830–32, gave characters of *Syringa Josikæa*, with an indication of the region where it had been found, and the same author in his admirable "Iconographia of the German Flora" publishes a figure of it. In more recent years various Hungarian collectors have found the plant in its native country and have distributed specimens.

In order to remove any doubts which may still exist upon the occurrence of *Syringa Josikæa* growing spontaneously in north-eastern Hungary, I have written to some of my Hungarian correspondents, Professor Borbàs, at Buda Pesth, and others. They give me exact and complete information with

regard to the discovery of the plant and the localities where it grows, which can leave no possible doubt with regard to its spontaneousness in Europe. I am indebted to the kindness of Mr. Carl von Flatt, Judge at Elest, near Grosswardein, the country of *Syringa Josikæa*, for a list of the ten known localities where it is known to occur, and which extend over the four counties of north-eastern Hungary—namely, Kolos, Bihar, Ung and Màrmaros. It is in the first of these, Kolos, that the plant was discovered on the river Sebes.

S. Josikæa grows everywhere near the water at an altitude varying from three hundred to four hundred metres above the sea, between 46° and 48° of north latitude and between 40° and 42° of east longitude. Mr. Victor Janka describes (*Ostreich Bot. Zeit.*, 1885, 3, f. f.) the locality in the district of Màrmaros, where he first found it, as covered with thickets of Alder, *Rhamnus Frangula* and *Salix aurita*.

Mr. Carl von Flatt, to whom I am indebted for the bibliography * of this species, which is joined to this communication, writes: "The home of the plant growing spontaneously is in the primeval forests of the mountain-chain which separates Hungary from Siebenburgen. For miles and miles of the territory where *S. Josikæa* grows neither a house nor a hut is to be seen. The stations discovered by me are both in the Remetz mountain-forests; one, Lunka Kotuni (1885), furnished few specimens, but there are finer ones in Pareu Foeguczat (1886), where there are nearly a thousand plants growing. Probably Kitabel had heard of this plant. In his manuscripts, preserved in the National Museum at Buda Pesth, there is a drawing with the following note:

"'*Syringa prunifolia*, Kit. Ita interea pro conservanda memoria nomino quæ ad viam Munkacsino-Leopolim (Lemberg) ducentem inter Felsö-Hrabonicza et Pudpolock in cottu Beregh crescit, foliis que Pruni distincta, referente Dre Bulla.'

"Studel, in his 'Nomenclator Botanicus,' gives under *S. Josikæa* as a synonym, *S. vinceloxifolia*, Baumg. Where he found this I cannot tell, for Baumgarten did not publish such a name."

If *S. Josikæa* is to be considered an escape from cultivation, what known species can it have been derived from? Certainly there does not exist in Europe any species from which it can have been derived, a reason sufficiently important for rejecting all idea of garden origin. And, you know, Monsieur Franchet has suggested the identity of *S. Josikæa* and *S. Emodi* of the Himalayas ("Observations sur la Syringa du Nord de la Chine"), but certainly no one had ever cultivated the Indian plant in Hungary previous to the year 1830, when *S. Josikæa* was discovered, and even to-day it is very doubtful if a single specimen of *S. Emodi* can be found in all that district.

Permit me to call attention also to an error in GARDEN AND FOREST with regard to the native country of *Syringa vulgaris*. That plant does not grow wild in Piedmont, and its most western station is southern Hungary, in the neighborhood of the Danube. If more western stations are given in some Floras, it is for plants which have escaped from gardens. In this country *Syringa vulgaris* maintains itself easily, and for a long time, wherever it has been planted, and, therefore, sometimes appears spontaneous or sub-spontaneous, although it is not indigenous here. This is the case, too, with *Philadelphus coronarius*, which is often found about the ruins of buildings which have been abandoned for more than half a century, furnishing the last trace of ancient gardens.

H. Christ.

Bâle, Switzerland.

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* SYRINGA JOSIKÆA, JACQ. FIL.

Nemzeti tudsalbodó (1830), p. 344.—*Erste quelle!* (Eine ungarische Zeitschrift.)
Reichenbach.—"Flora Germanica excursoria" (1830), i., p. 432. (Zu spät!) *Flora* (Regensburg), xiv. (1831), i., p. 67.
Reichenbach.—"Plantæ criticæ" (1831), n. 1049.
M. Fuss.—In "Joh. Chr. Gottl. Baumgarten Enumerationis stirpium Transsylvaniæ Indigenarum Mantillæ," i. (1846), p. 2, n. 15.
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Aug. Neilreich.—"Anfzählung der in Ungarn u. Slavonien bisher beobachteten wildwachsenden Gefässpflanzen" (1870), p. 155.
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Recent Publications.

Fungous Diseases of the Grape and other Plants, and Their Treatment. By F. Lamson-Scribner. J. T. Lovett Company, Little Silver, N. J. Small 8vo, pp. 134.

The knowledge of fungous diseases of plants has, within comparatively few years, been supplemented by so many valuable practical experiments on the relative merits of different chemicals in checking their growth, and by the invention of machines for applying them in the most efficient way, that there was need of a compact popular summary of the subject for the use of farmers and fruit-raisers. This is afforded by the little book of Professor Scribner, which gives a popular account more especially of the principal rots, mildews, blights and other diseases of the Vine, followed by shorter chapters on various diseases of Apples, Pears, Cherries, Plums, Peaches and Raspberries. The main object of the author is to show the best method of applying remedies, and the descriptions of the Fungi which cause the various diseases are designed to enable those who are not well informed with regard to Fungi to recognize with as little difficulty as possible the distinctive characters of the different diseases as a preliminary step in applying the remedies. The compass of the book prevents any extended account of the different Fungi, but those which affect the Grape are given with sufficient fullness for all practical purposes. A more extended introductory chapter on the general characters of Fungi would, however, have served a useful purpose. A considerable number of woodcuts give the gross and microscopic appearance of the Fungi and the appliances for sprinkling. It is to be regretted that the figures are not numbered consecutively, since the irregularity of the numbering makes back reference difficult. On the ground of good taste, too, the caricature which passes as a portrait of the author in the frontispiece had better have been omitted.

The work is to be recommended to the large number of persons who need a summary of this important subject with a view to making a practical application of the knowledge acquired.

The Nursery Book. A Complete Guide to the Multiplication and Pollination of Plants. By L. H. Bailey. New York: Rural Publishing Company.

This manual offers a sufficiently full account of the usual methods of propagating and crossing plants, and it will be a convenient and useful reference not only for amateurs, but for nurserymen who are familiar with only a few branches of their business. The great portion of the book is taken up with a list of plants arranged in alphabetical order, with an explanation of the methods of multiplying each one. We know of no such complete list within anything like the compass of this volume. An admirable feature of the hand-book is the ordinal index, which groups together all the references to the plants in a given family. If any plant chances to be omitted from the nursery list, or if the reader desires to learn more about the method of propagating some plant included in the list, he can consult what is said of every other plant in this natural order, and undoubtedly will find some information which will prove of value.

The explanation of the different methods of grafting, budding, layering, etc., are sufficiently clear and complete, but the cuts which were intended to illustrate these methods are not nearly as good as the text; and it seems to us that the words "graftage," "seedage," "cuttage," etc., with which Professor Bailey has attempted to enrich the English language, were hardly worth coining.

Notes.

Mr. Charles Dudley Warner's articles on Southern California, recently printed in *Harper's Magazine*, have been issued in book form under the title, "Our Italy."

The California State Board of Horticulture has published an illustrated pamphlet, written by Mr. M. B. M. Lelong, and called "The Orange from Seed to Grove," the object of which is to supply reliable guidance to those who intend to plant Orange-groves in that state.

Mr. Alfred Parsons, an English artist well known in this country by the books which he has illustrated in conjunction with his friend, Mr. Edwin Abbey, recently opened in London an exhibition of pictures called "Orchards and Gardens." Many pictures of famous English gardens were included, and, knowing Mr. Parsons' sympathetic feeling for such scenes,

and the refined, poetic quality of his talent, one can well believe that the exhibition was very interesting, as well as novel in character.

A new monthly magazine, called the *Modern Cemetery*, has been started in Chicago with the object of supplying useful information to cemetery superintendents and lot-owners, and of improving the taste of the community as regards the planning and conduct of burial grounds.

A correspondent in Massachusetts states that he has found in growing Tomatoes under glass that the old plants cut down, as recommended by Mr. Mathews in our issue of April 8th, do much better than young seedlings. We should like to hear from others who have tried this plan.

Dr. Lorenzo G. Yates calls attention, in the *Pacific Rural Press*, to the value of the Chocho Plant (*Sechium edule*) as a food-product. The plant is a native of the West Indies, and thrives satisfactorily in Florida. It is one of the Cucurbitaceæ, resembling an ordinary Squash in general appearance. Both roots and fruits are available as food.

The *Revue Horticole* states that our common water-weed, *Elodea Canadensis*, which had already spread widely in England, has more recently introduced itself into France to such an extent that many streams are now seriously obstructed by it. In the canals of Belgium it is also proving a conspicuous source of trouble, and the same bids fair to be the case with another American immigrant, the little moss-like, floating *Azolla Caroliniana*.

Last week the Cornelian Cherry, the Forsythias, the early upright Honeysuckle (*Lonicera Standishii*), with our native Spice-wood and Andromeda (*A. floribunda*), comprised about all the shrubs which were blooming in Central Park. But two or three hot days in a northern spring work wondrous transformations, and no doubt the thickets will be all ablaze with the flowers of the Japan Quince and a dozen other shrubs before this paper is read.

Three of the Strawberries which were specially commended by Mr. T. T. Lyon, who tested them at the South Haven Substation of the Michigan Agricultural College, were Parker Earle, Pearl and Cloud. The first of these originated in northern Texas, the second came from southern New Jersey, and the third is a Louisiana seedling. That these plants are all promising in places so far from their origin would seem to indicate that they have great strength and adaptability of constitution.

According to *L'Art dans les Deux Mondes*, "a splendid collection of wood specimens" will be sent to the World's Fair at Chicago from Jamaica and the other West Indian islands. "These specimens . . . will have the appearance of bound books, one cover of which will be polished, while the other will show the natural aspect of the wood, and the back will retain the bark and will bear a tablet giving, in gold letters, the name of the species. This 'botanical library' will be accompanied by notices explaining the localities where the tree is found, and the qualities and uses of its wood."

In an address, delivered at a recent meeting of the Massachusetts Horticultural Society, Colonel Henry W. Wilson said that the Cocoanut Palm thrives in the Bahamas as well as in any part of the world, and this is the only district near to the United States where it certainly will. These Palms will bear in four years from planting the seed, and then fruit perennially, a leaf expanding every month, with a cluster of flowers at the base which produces from forty to sixty nuts. They keep growing the whole year, and show, at all times, the whole gamut, from flower to ripe fruit; every day the owner can pick fruit, which sell there for three cents apiece.

Colonel J. B. Clark, editor of the *Mirror and Farmer*, of Manchester, New Hampshire, offered $100 in prizes for the best essay on maple-sugar making. Forty-one essays were received, and all of them are published in the *Mirror and Farmer* for April 2d. They would make together a duodecimo volume of 250 pages, and contain a body of doctrine comprising about all that is known of practical sugar making in northern New England. The first prize was taken by E. W. Bisbee, of Moretown, Vermont; the second by H. I. Collins, of the Experiment Station, Burlington, Vermont; the third by A. S. Moody, of Moscow, Vermont, and the fourth by Timothy Wheeler, of Waterbury, Vermont.

A correspondent, writing from Kansas Experiment Station at Manhattan, under date of April 15th, says that the Forsythia was in full bloom there for the first time in a number of years. The mercury reached zero but twice during the last winter, and then remained there but for a short time. Usually this shrub shows only a few blossoms on the lower and more sheltered branches. *Lonicera fragrantissima* was also in full bloom, and seems perfectly hardy in severe winters in stiff, clayey, upland soil, but is often killed back on bottom-lands. Nearly all the *Arbor-vitæs* on the station grounds have suffered unaccountably, notwithstanding the mild winter. Trees which have endured, in former years, a temperature of twenty degrees below zero without harm now appear disfigured and dead on the north side.

A "Biographical Index to British and Irish Botanists," compiled by Messrs. James Britten and G. S. Boulger, has recently been issued in serial form in the Journal of Botany. It is now proposed to publish it in book form, and subscriptions will be received by the editors of the *Bulletin of the Torrey Botanical Club* in this city. The price will be one dollar, payable on the delivery of the volume. The list includes "all persons residing in the British Islands who have been at all prominent in the science, including collectors and patrons of botany," and gives the date and place of birth and death, the place of burial, dates of election to the Linnæan and Royal Societies, and references to sources where fuller information may be obtained.

In his proclamation, setting apart April 25 as Arbor day, Governor Russell, of Massachusetts, gives this wise counsel as to the higher uses of the celebration: "And I recommend that it be observed in ways which may serve to increase the love and respect in which we all hold the dignity and beauty of this noble land which God has given to our keeping. Let us devote the day to the establishment and adornment of public grounds, to the restoration of our wasted forests, to the repair of every defacement which makes this commonwealth less beautiful than it should be, so that we may not only have it appear the nobler in our own time, but that we may hand it down to our children the statelier and more fruitful for our care."

A circular has been prepared by Professor B. T. Galloway, and issued by the Department of Agriculture, on the treatment of nursery stock for leaf-blight and powdery mildew. The Bordeaux mixture and the ammoniacal solution, both of which preparations have been often described in this paper, are alone commended for use. The circular gives directions for applying these remedies to the various kinds of trees for the different diseases and gives illustrations of the most effective pumps and nozzles which have been devised for spraying. Apple-seedlings, it is stated, can be treated with the ammonia solution five times at a cost of eight cents a thousand, while the Plum, Pear, Cherry and Quince can be treated six times the first season with the Bordeaux mixture for fifty-five cents a thousand. These are certainly inexpensive remedies, and they are reported to be very effective. This little circular of eight pages will be forwarded by the Department to any nurseryman or fruit-grower on application.

It is now possible to add a few facts relating to the lamented Maximowicz to the short note which appeared a few weeks ago in these columns at the time of his death. The information is gathered principally from a notice published in *Nature* on the 12th of March, from the pen of Dr. Otto Stapf. Maximowicz was born at Jula in 1827, and was educated in St. Petersburg. At the age of seventeen he entered the University of Dorpat, where, after completing his studies, he was appointed assistant to the director of the botanical gardens, a post which he continued to fill until 1852, when he was made conservator of the Botanic Garden at St. Petersburg. A year later he started on a voyage round the world on the frigate Diana, being entrusted with the duty of gathering living plants for the St. Petersburg garden. On this journey he visited Rio, Valparaiso and the Hawaiian Islands. The Crimean war compelled the Diana to seek a Russian port, and the nearest was De Castris on the coast of Manchuria. Maximowicz was obliged to leave the ship, and decided to explore the basin of the Amour and the adjacent region, then little known. This task he carried out under great difficulties and with severe privations, and returned to St. Petersburg through Siberia in 1857. He traveled in Manchuria again in 1859 and 1860, visited Jesso in 1861, Nepon in 1862, Kiu-siu in 1863, and returned to Europe by sea in 1864. In 1869 he was appointed Botanicus Primarius of the Imperial Botanic Garden at St. Petersburg, and was entrusted with the care of the herbarium of the Academy. Those who had the advantage of Maximowicz's acquaintance and friendship will feel, with Dr. Stapf, "that he was a noble, high-minded nature, a highly cultivated scholar in almost every branch of learning, and a gentleman in the truest sense of the word."

Family Jars.

Many otherwise happy homes are made places of perpetual discord by the ill-nature of the inmates. On whom the blame must generally rest we cannot say, but when it is said that "Mrs. So and So is a chronic growler," and that "she makes her husband's life a burden," some kind friend should suggest the use of Beecham's Pills. They will cure that headache, nausea or impaired digestion from which the poor woman is suffering, and which makes her so ill-natured. 25 cents a box. If your druggist does not have them, send to B. F. Allen Co., 365 and 367 Canal St., New York.

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